



PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN THE APPLICATION OF:

DAVID MCKINNON

CASE NO.: DC7000USCNT

APPLICATION NO.: 10/808854

CONFIRMATION NO.: 6675

GROUP ART UNIT: 1714

EXAMINER: CAIN

FILED: March 24, 2004

FOR: SOLVENT-BASED RECOVERY AND RECYCLE OF POLYAMIDE  
MATERIAL

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

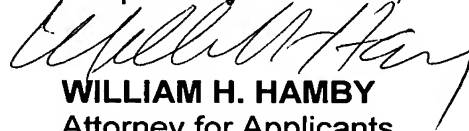
In compliance with 37 C.F.R. §§1.97 and 1.98, Applicants bring to the attention of the U.S. Patent and Trademark Office the information listed on the enclosed PTO/SB/08A and/or PTO/SB/08B forms. A copy of the information, if required, is also enclosed. Consideration of the information is requested under 37 C.F.R. § 1.56 and this information is submitted in accord with the provisions of §1.97(c): after the period specified in §1.97(b) but before the mailing of a Final Office Action, or a Notice of Allowance, or any other action that closes prosecution.

06/01/2007 CNGUYEN2 00000050 041928 10808854

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The PTO is authorized to charge the fee set forth in 37 C.F.R. §1.17(p) to Deposit Account No. **04-1928** (E. I. du Pont de Nemours and Company) in order to complete the requirements for consideration of this Information Disclosure Statement.

Respectfully submitted,



**WILLIAM H. HAMBY**

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Dated: May 30, 2007

T:\Patent Documents\Eng. Polymers\DC\DC7000\DC7000CONT\IDS.doc



PTO/SB/08a (09-06)

Approved for use through 03/31/2007. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

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of

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**Complete if Known**

Application Number	10/808854
Filing Date	March 24, 2004
First Named Inventor	David Mckinnon
Art Unit	1714
Examiner Name	
Attorney Docket Number	DC7000USCNT

**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		US- 2,348,751	05-16-1944	Peterson	
		US- 2,840,606	06-24-1958	Miller	
		US- 2,872,420	02-03-1959	Kruffy	
		US- 3,006,867	10-31-1961	Simon	
		US- 3,223,731	12-14-1965	Thorburn	
		US- 3,609,127	09-28-1971	Matthews	
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		US- 5,198,471	03-30-1993	Nauman	
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		US- 5,681,952	10-28-1997	Sifniades	
		US- 5,889,063	03-30-1999	Wertz	
		US- 5,929,234	07-27-1999	Sifniades	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
		DE 12 35 924				
		DE 43 09 427				
		JP 52-113938				
		GB 1 017 985		Great Britain		
		WO 94/08942	04-28-1994	E.I. Dupont		

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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		US- 5,932,724	08-03-1999	Sifniades	
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		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
		788 009		Canada		

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II-A, I-E4, V-F3, X-E5

25.7.62 BADI

## RECOVERY OF LACTAMS FROM POLYAMIDES.

BS00

GE. 1,235,924 -lg. (Non-Con.) 25.7.62 (GE) as B 68,167 Pub. 9.3.67 Badische Anilin.

NEW

Recovery of lactams from polyamides consisting wholly or partially of  $\omega$ -aminocarboxylic acids, by heating to 225-350°, in the presence of a depolymerisation catalyst consisting of a mixture of phosphoric and boric acids or anhydrides or a compound that gives boric acid under the reaction conditions, in a stream of steam. The ratio of phosphoric acid to boric is 1:20 to 20:1, pref. 1:3 to 3:1, and 0.1-5% by wt. of catalyst is used, based on the wt. of polyamide. The lactam may be recovered by fractional condensation of the vapours.

ADVANTAGES

Higher volume-time-yields than prior art processes. It can be carried out continuously.

EXAMPLE

1000 pts. polycaprolactam were melted with 1.5

pts. phosphoric acid and 3 pts. boric acid, and the mixture heated to 270-280°. Steam is passed in at 250°. The vapours leaving the vessel were cooled to 100-105° when  $\epsilon$ -caprolactam containing ca. 30% water crystallised. This was extracted and the extract distilled to give pure lactam.

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